Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

1. (original) A method of treating a microbial infection in an animal in need thereof, said method comprising administering to the animal an effective amount of a pharmaceutical composition comprising an oligomer of Formula I:

$$\mathbf{R^1\text{-}[\text{-}x\text{-}A_1\text{-}y\text{-}x\text{-}A_2\text{-}y\text{-}]_m\text{-}R^2} \qquad (I)$$

or an acceptable salt or solvate thereof,

wherein:

x is NR^8, $-N(R^8)N(R^8)-$, O, or S; y is C=O, C=S, O=S=O, or $-C(=O)C(=O)-$; and R^8 is hydrogen or alkyl;

A_1 and A_2 are independently optionally substituted arylene or optionally substituted heteroarylene, wherein:

(i) A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(ii) A_1 is optionally substituted arylene or optionally substituted heteroarylene and A_2 is a C_3 to C_8 cycloalkyl or $-(CH_2)_q-$, wherein q is 1 to 7, wherein A_1 and A_2 are independently optionally substituted with one or more polar

(PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(iii) A_2 is optionally substituted arylene or optionally substituted heteroarylene, and A_1 is a C_3 to C_8 cycloalkyl or $-(CH_2)_q-$, wherein q is 1 to 7, wherein A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

R^1 is

(i) hydrogen, a polar (PL) group, or a non-polar (NPL) group, and R^2 is -x-A_1-y-R^{11}, wherein R^{11} is hydrogen, a polar (PL) group, or a non-polar (NPL) group; or

(ii) R^1 and R^2 are independently hydrogen, a polar (PL) group, or a non-polar (NPL) group; or

(iii) R^1 and R^2 together are a single bond;

NPL is a nonpolar group independently selected from the group consisting of $-B(OR^4)_2$ and $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

R^4 and $R^{4'}$ are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heteroaryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^3, -C(=O)-, -C(=O)-N=N-NR^3-, -C(=O)-NR^3-N=N-, -N=N-NR^3-, -C(=N-N$(R^3)_2$)-, -C(=NR^3)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-P(=O)$_2$O-, -R^3O-, -R^3S-, -S-C=N- and –C(=O)-NR^3-O- , wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the -$(CH_2)_{pNPL}$- alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pNPL is 0 to 8;

q1NPL and q2NPL are independently 0, 1 or 2;

PL is a polar group selected from the group consisting of halo, hydroxyethoxymethyl, methoxyethoxymethyl, polyoxyethylene, and $-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^5, -C(=O)-, -C(=O)-N=N-NR^5-, -C(=O)-NR^5-N=N-, -N=N-NR^5-, -C(=N-N$(R^5)_2$)-, -C(=NR^5)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-P(=O)$_2$O-, -R^5O-, -R^5S-, -S-C=N- and –C(=O)-NR^5-O-, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of nitro, cyano, amino, hydroxy, alkoxy, alkylthio, alkylamino, dialkylamino, -NH$(CH_2)_pNH_2$ wherein p is 1 to 4, -N$(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, semicarbazone, aryl, heterocycle and heteroaryl, any of which is

optionally substituted with one or more of amino, halo, cyano, nitro, hydroxy, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, amidino, guanidino, guanyl, aminosulfonyl, aminoalkoxy, aminoalkythio, lower acylamino, or benzyloxycarbonyl;

the $-(CH_2)_{pPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pPL is 0 to 8;

q1PL and q2PL are independently 0, 1 or 2; and

m is 1 to about 20;

and a pharmaceutically acceptable carrier or diluent.

2. (original) The method of claim 1, wherein x is NR^8 and y is C=O.

3. (original) The method of claim 1, wherein A_1 is substituted arylene, A_2 is $-(CH_2)_q-$, and q is 1 or 2, and wherein one of A_1 and A_2 is substituted with one or more polar (PL) group(s), and the other of A_1 and A_2 is substituted with one or more non-polar (NPL) group(s).

4. (original) The method of claim 3, wherein A_1 is substituted *m*-phenylene and q is 1, and wherein one of A_1 and A_2 is substituted with one polar (PL) group, and the other of A_1 and A_2 is substituted with one non-polar (NPL) group.

5. (original) The method of claim 1, wherein A_2 is substituted arylene, A_1 is $-(CH_2)_q-$, and q is 1 or 2, and wherein one of A_1 andr A_2 is substituted with one or more polar (PL) group(s), and the other of A_1 and A_2 is substituted with one or more non-polar (NPL) group(s).

6. (original) The method of claim 5, wherein A_2 is substituted *m*-phenylene and q is 1, and wherein one of A_1 and A_2 is substituted with one polar (PL) group, and the other of A_1 and A_2 is substituted with one non-polar (NPL) group.

7. (original) The method of claim 1, wherein:

x is NR^8, y is C=O, and R^8 is hydrogen;

A_1 is optionally substituted *o*-, *m*-, or *p*-phenylene and A_2 is $-(CH_2)_q-$, wherein q is 1, and wherein one of A_1 and A_2 is substituted with one or two polar (PL) group(s), and the other of A_1 and A_2 is substituted with one or two non-polar (NPL) group(s); or

A_2 is optionally substituted *o*-, *m*-, or *p*-phenylene and A_1 is $-(CH_2)_q-$, wherein q is 1, and wherein one of A_1 and A_2 is substituted with one or two polar (PL) group(s), and the other of A_1 and A_2 is substituted with one or two non-polar (NPL) group(s);

R^1 and R^2 are independently hydrogen, a polar (PL) group, or a non-polar (NPL) group;

NPL is $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

$R^{4'}$ is selected from the group consisting of C_1-C_{10} alkyl, C_3-C_{18} branched alkyl, C_2-C_{10} alkenyl, C_2-C_{10} alkynyl, and C_6-C_{10} aryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of NH, -C(=O)-, O and S;

the $-(CH_2)_{pNPL}-$ alkylene chain is optionally substituted with one or more amino groups;

pNPL is 0 to 8;

q1NPL and q2NPL are 0;

PL is $-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

U^{PL} is absent or selected from the group consisting of O, S, NH, and -C(=O);

V is selected from the group consisting of amino, C_1-C_6 alkylamino, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, diazamino, amidino, and guanidino;

the $-(CH_2)_{pPL}-$ alkylene chain is optionally substituted with one or more amino groups;

pPL is 0 to 8;

q1PL and q2PL are 0; and

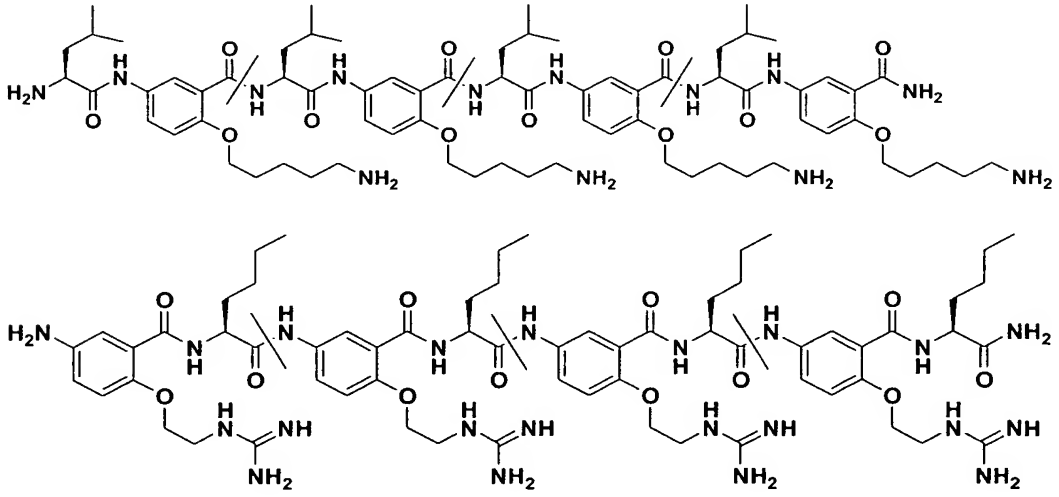
m is 4 or 5.

8. (original) The method of claim 7, wherein A_1 is optionally substituted *m*-phenylene, A_2 is $-(CH_2)_q-$, q is 1, and wherein one of A_1 and A_2 is substituted with one polar (PL) group, and the other of A_1 and A_2 is substituted with one non-polar (NPL) group.

9. (original) The method of claim 7, wherein A_2 is optionally substituted *m*-phenylene, A_1 is $-(CH_2)_q-$, q is 1, and wherein one of A_1 and A_2 is substituted with one polar (PL) group, and the other of A_1 and A_2 is substituted with one non-polar (NPL) group.

10. (original) The method of claim 9, wherein A_1 substituted with one non-polar (NPL) group, and A_2 is substituted with one polar (NPL) group.

11. (original) The method of claim 1, wherein the oligomer is one of



12. (original) The method of claim 1, wherein the microbial infection is a bacterial infection, a fungal infection, or a viral infection.

13. (cancelled)

14. (cancelled)

15. (original) A method of providing an antidote to low molecular weight heparin overdose in an animal, said method comprising administering to the animal an effective amount of a pharmaceutical composition comprising an oligomer of claim 1.

16. (original) A method of treating a microbial infection in an animal in need thereof, said method comprising administering to the animal an effective amount of a pharmaceutical composition comprising an oligomer of Formula II:

$$\mathbf{R^1\text{-}[\text{-}x\text{-}A_1\text{-}x\text{-}y\text{-}A_2\text{-}y\text{-}]_m\text{-}R^2} \qquad \text{(II)}$$

or an acceptable salt or solvate thereof,

wherein:

x is NR^8, O, S, $-N(R^8)N(R^8)-$, $-N(R^8)-(N=N)-$, $-(N=N)-N(R^8)-$, $-C(R^7R^{7'})NR^8-$, $-C(R^7R^{7'})O-$, or $-C(R^7R^{7'})S-$; and y is C=O, C=S, O=S=O, $-C(=O)C(=O)-$, $C(R^6R^{6'})C=O$ or $C(R^6R^{6'})C=S$; or

x and y are taken together to be pyromellitic diimide;

wherein R^8 is hydrogen or alkyl; R^7 and $R^{7'}$ are independently hydrogen or alkyl, or R^7 and $R^{7'}$ together are $-(CH_2)_p-$, wherein p is 4 to 8; and R^6 and $R^{6'}$ are independently hydrogen or alkyl, or R^6 and $R^{6'}$ together are $(CH_2)_2NR^{12}(CH_2)_2$, wherein R^{12} is hydrogen, $-C(=N)CH_3$ or $C(=NH)-NH_2$;

A_1 and A_2 are independently optionally substituted arylene or optionally substituted heteroarylene, wherein A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

R^1 is

(i) hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is -x-A_1-x-R^1, wherein A_1 is as defined above and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(ii) hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is -x-A'-x-R^1, wherein A' is aryl or heteroaryl and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

(iii) –y-A_2-y-R^2, and R^2 is hydrogen, a polar group (PL), or a non-polar group (NPL); or

(iv) –y-A' and R^2 is -x-A', wherein A' is aryl or heteroaryl and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(v) R^1 and R^2 are independently a polar group (PL) or a non-polar group (NPL); or

(vi) R^1 and R^2 together form a single bond;

NPL is a nonpolar group independently selected from the group consisting of -$B(OR^4)_2$ and $-(NR^{3'})_{q1NPL}$-U^{NPL}-$(CH_2)_{pNPL}$-$(NR^{3''})_{q2NPL}$-$R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

R^4 and $R^{4'}$ are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heteroaryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^3, -C(=O)-, -C(=O)-N=N-NR^3-, -C(=O)-NR^3-N=N-, -N=N-NR^3-, -C(=N-$N(R^3)_2$)-, -C(=NR^3)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-, -R^3O-, -R^3S-, -S-C=N- and –C(=O)-NR^3-O- , wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the -$(CH_2)_{pNPL}$- alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pNPL is 0 to 8;

q1NPL and q2NPL are independently 0, 1 or 2;

PL is a polar group selected from the group consisting of halo, hydroxyethoxymethyl, methoxyethoxymethyl, polyoxyethylene, and –$(NR^{5'})_{q1PL}$-U^{PL}-$(CH_2)_{pPL}$-$(NR^{5'})_{q2PL}$-V, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^5, -C(=O)-, -C(=O)-N=N-NR^5-, -C(=O)-NR^5-N=N-, -N=N-NR^5-, -C(=N-$N(R^5)_2$)-, -C(=NR^5)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-,

$-R^5O-$, $-R^5S-$, -S-C=N- and $-C(=O)-NR^5-O-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of nitro, cyano, amino, hydroxy, alkoxy, alkylthio, alkylamino, dialkylamino, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, semicarbazone, aryl, heterocycle and heteroaryl, any of which is optionally substituted with one or more of amino, halo, cyano, nitro, hydroxy, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, amidino, guanidino, guanyl, aminosulfonyl, aminoalkoxy, aminoalkythio, lower acylamino, or benzyloxycarbonyl;

the $-(CH_2)_{pPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pPL is 0 to 8;

q1PL and q2PL are independently 0, 1 or 2; and

m is 1 to about 20;

and a pharmaceutically acceptable carrier or diluent.

17. (original) The method of claim 16, wherein:

x is NR^8, y is C=O, and R^8 is hydrogen or alkyl;

A_1 and A_2 are independently optionally substituted *o*-, *m*-, or *p*-phenylene or pyrimidinylene, wherein A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a

combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

R^1 is hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is -x-A_1-x-R^1, wherein A_1 is as defined above and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

NPL is $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, and C_1-C_6 alkoxy;

$R^{4'}$ is selected from the group consisting of hydrogen, C_1-C_{10} alkyl, C_3-C_{18} branched alkyl, C_2-C_{10} alkenyl, C_2-C_{10} alkynyl, C_3-C_8 cycloalkyl, C_6-C_{10} aryl, and heteroaryl, any of which is optionally substituted with one or more C_1-C_6 alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, NH, -C(=O)-, -C(=O)-N=N-NH-, -C(=O)-NH-N=N-, -N=N-NH-, $-C(=N-N(R^3)_2)-$, $-C(=NR^3)-$, -C(=O)O-, $-R^3S-$ and $-R^3O-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the $-(CH_2)_{pNPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups;

pNPL is 0 to 6;

q1NPL and q2NPL are 0;

PL is $-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, and C_1-C_6 alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, NH, -C(=O)-, -C(=O)-N=N-NH-, -C(=O)-NH-N=N-, -N=N-NH-, $-C(=N-N(R^5)_2)-$, $-C(=NR^5)-$, -C(=O)O-, $-R^5O-$, and $-R^5S-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of nitro, cyano, amino, hydroxy, C_1-C_6 alkoxy, C_1-C_6 alkylthio, C_1-C_6 alkylamino, C_1-C_6 dialkylamino, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, semicarbazone, C_6-C_{10} aryl, heterocycle, and heteroaryl;

the $-(CH_2)_{pPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups;

pPL is 0 to 6;

q1PL and q2PL are 0; and

m is 1 to 10.

18. (original) The method of claim 16, wherein x is O and y is C=O.

19. (original) The method of claim 16, wherein x is $-N(R^8)N(R^8)-$, y is C=O, and R^8 is hydrogen.

20. (original) The method of claim 16, wherein A_1 and A_2 are independently optionally substituted *o*-, *m*-, or *p*-phenylene.

21. (original) The method of 20, wherein A_1 and A_2 are independently optionally substituted *m*-phenylene.

22. (original) The method of claim 16, wherein one of A_1 and A_2 is *o*-, *m*-, or *p*-phenylene, and the other of A_1 and A_2 is heteroarylene.

23. (original) The method of claim 22, wherein one of A_1 and A_2 is *m*-phenylene, and the other of A_1 and A_2 is pyrimidinylene.

24. (original) The method of claim 16, wherein A_1 and A_2 are independently optionally substituted arylene or optionally substituted heteroarylene, and one of A_1 and A_2 is substituted with one or more polar (PL) group(s) and one or more nonpolar (NPL) group(s) and the other of A_1 and A_2 is unsubstituted.

25. (original) The method of claim 24, wherein A_1 and A_2 are optionally substituted *m*-phenylene, and one of A_1 and A_2 is substituted with one polar (PL) group and one nonpolar (NPL) group and the other of A_1 and A_2 is unsubstituted.

26. (original) The method of claim 16, wherein R^1 is hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is -x-A_1-x-R^1, wherein A_1 is as defined in claim 16 and is

substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s).

27. (original) The method of claim 26, wherein R^1 is a polar (PL) group and R^2 is -x-A_1-x-R^1, where A_1 is substituted with one or two polar (PL) group(s) and one non-polar (NPL) group.

28. (original) The method of claim 16, wherein:

NPL is $-(NR^{3'})_{q1NPL}$-U^{NPL}-$(CH_2)_{pNPL}$-$(NR^{3''})_{q2NPL}$-$R^{4'}$, and R^3, $R^{3'}$, $R^{3''}$, $R^{4'}$, U^{NPL}, pNPL, q1NPL and q2NPL are as defined in claim 16.

29. (original) The method of claim 28, wherein R^3, $R^{3'}$, and $R^{3''}$ are independently hydrogen, C_1-C_6 alkyl, or C_1-C_6 alkoxy.

30. (original) The method of claim 29, wherein R^3, $R^{3'}$, and $R^{3''}$ are hydrogen.

31. (original) The method of claim 28, wherein $R^{4'}$ is C_1-C_{10} alkyl, C_3-C_{18} branched alkyl, C_2-C_{10} alkenyl, C_2-C_{10} alkynyl, or C_6-C_{10} aryl.

32. (original) The method of claim 31, wherein $R^{4'}$ is phenyl, methyl, ethyl, *n*-propyl, isopropyl, *n*-butyl, *tert*-butyl, or *n*-pentyl.

33. (original) The method of claim 28, wherein U^{NPL} is O, S, NH, -C(=O)-, -C(=O)-N=N-NH-, -C(=O)-NH-N=N-, -N=N-NH-, -C(=N-N(R^3)$_2$)-, -C(=NR^3)-, -C(=O)O-, -R^3S- or -R^3O-.

34. (original) The method of claim 33, wherein U^{NPL} is -C(=O)-.

35. (original) The method of claim 33, wherein U^{NPL} is absent.

36. (original) The method of claim 16, wherein NPL is *n*-propyl, isopropyl, *n*-butyl, or *tert*-butyl.

37. (original) The method of claim 28, wherein:
pNPL is 0 to 2; and q1NPL and q2NPL are independently 0 or 1.

38. (original) The method of claim 28, wherein the -$(CH_2)_{pNPL}$- alkylene chain in NPL is substituted with one or more amino groups.

39. (original) The method of claim 16, wherein:
PL is –$(NR^{5'})_{q1PL}$-U^{PL}-$(CH_2)_{pPL}$-$(NR^{5''})_{q2PL}$-V, and R^5, $R^{5'}$, $R^{5''}$, V, U^{PL}, pPL, q1PL and q2PL are as defined in claim 16.

40. (original) The method of claim 39, wherein R^5, $R^{5'}$, and $R^{5''}$ are independently hydrogen, C_1-C_6 alkyl, or C_1-C_6 alkoxy.

41. (original) The method of claim 39, wherein U^{PL} is O, S, NH, -C(=O)-, -C(=O)-N=N-NH-, -C(=O)-NH-N=N-, -N=N-NH-, -C(=N-N(R^5)$_2$)-, -C(=NR^5)-, -C(=O)O-, -R^5S- or -R^5O-.

42. (original) The method of claim 41, wherein U^{PL} is O, S, -C(=O), or is absent.

43. (original) The method of claim 39, wherein V is amino, C_1-C_6 alkylamino, -NH$(CH_2)_pNH_2$ wherein p is 1 to 4, -N$(CH_2CH_2NH_2)_2$, diazamino, amidino, or guanidino.

44. (original) The method of claim 39, wherein pPL is 2 to 4, and q1PL and q2PL are 0.

45. (original) The method of claim 39, wherein the -$(CH_2)_{pPL}$- alkylene chain in PL is substituted with one or more amino groups.

46. (original) The method of claim 16, wherein m is 1 to about 5.

47. (original) The method of claim 16, wherein m is 1, 2 or 3.

48. (original) The method of claim 16, wherein:

x is NR^8, y is C=O, and R^8 is hydrogen;

A_1 and A_2 are independently optionally substituted *m*-phenylene, wherein

(i) one of A_1 and A_2 is substituted with one polar (PL) group and one nonpolar (NPL) group and the other of A_1 and A_2 is unsubstituted; or

(ii) one of A_1 and A_2 is substituted with one polar (PL) group and one nonpolar (NPL) group and the other of A_1 and A_2 is substituted with one or two polar (PL) group(s);

R^1 is hydrogen or a polar group (PL), and R^2 is -x-A_1-x-R^1, wherein A_1 is as defined above and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

NPL is $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, and C_1-C_6 alkoxy;

$R^{4'}$ is selected from the group consisting of hydrogen, C_1-C_{10} alkyl, C_3-C_{18} branched alkyl, C_2-C_{10} alkenyl, C_2-C_{10} alkynyl, C_3-C_8 cycloalkyl, C_6-C_{10} aryl, and heteroaryl, any of which is optionally substituted with one or more C_1-C_6 alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, NH, -C(=O)-, -R^3S- and -R^3O-, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the -$(CH_2)_{pNPL}$- alkylene chain is optionally substituted with one or more amino groups;

pNPL is 0 to 6;

q1NPL and q2NPL are 0;

PL is $-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, C_1-C_6 alkyl, and C_1-C_6 alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, NH, -C(=O)-, $-R^5O-$, and $-R^5S-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of amino, hydroxy, C_1-C_6 alkylamino, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, diazamino, amidino, and guanidino;

the $-(CH_2)_{pPL}-$ alkylene chain is optionally substituted with one or more amino groups;

pPL is 0 to 6;

q1PL and q2PL are 0; and

m is 1, 2 or 3.

49. (original) A method of treating a microbial infection in an animal in need thereof, said method comprising administering to the animal an effective amount of a pharmaceutical composition comprising an oligomer of Formula IIa:

$$\mathbf{R^1\text{-}x\text{-}A_1\text{-}x\text{-}y\text{-}A_2\text{-}y\text{-}x\text{-}\ A_1\text{-}x\text{-}R^2} \qquad \text{(IIa)}$$

or an acceptable salt or solvate thereof,

wherein:

x is NR^8, O, S, or $-N(R^8)N(R^8)-$; and y is C=O, C=S, or O=S=O; wherein R^8 is hydrogen or alkyl;

A_1 and A_2 are independently optionally substituted arylene or optionally substituted heteroarylene, wherein A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

R^1 is a polar group (PL) or a non-polar group (NPL); and R^2 is R^1;

NPL is a nonpolar group independently selected from the group consisting of $-B(OR^4)_2$ and $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

R^4 and $R^{4'}$ are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heteroaryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^3, -C(=O)-, -C(=O)-N=N-NR^3-, -C(=O)-NR^3-N=N-, -N=N-NR^3-, -C(=N-$N(R^3)_2$)-, -C(=NR^3)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-, -R^3O-, -R^3S-, -S-C=N- and -C(=O)-NR^3-O-, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the $-(CH_2)_{pNPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pNPL is 0 to 8;

q1NPL and q2NPL are independently 0, 1 or 2;

PL is a polar group selected from the group consisting of halo, hydroxyethoxymethyl, methoxyethoxymethyl, polyoxyethylene, and

$-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^5, -C(=O)-, -C(=O)-N=N-NR^5-, -C(=O)-NR^5-N=N-, -N=N-NR^5-, -C(=N-$N(R^5)_2$)-, -C(=NR^5)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-, -R^5O-, -R^5S-, -S-C=N- and –C(=O)-NR^5-O-, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of nitro, cyano, amino, hydroxy, alkoxy, alkylthio, alkylamino, dialkylamino, -$NH(CH_2)_pNH_2$ wherein p is 1 to 4, -$N(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, semicarbazone, aryl, heterocycle and heteroaryl, any of which is optionally substituted with one or more of amino, halo, cyano, nitro, hydroxy, -$NH(CH_2)_pNH_2$ wherein p is 1 to 4, -$N(CH_2CH_2NH_2)_2$, amidino, guanidino, guanyl, aminosulfonyl, aminoalkoxy, aminoalkythio, lower acylamino, or benzyloxycarbonyl;

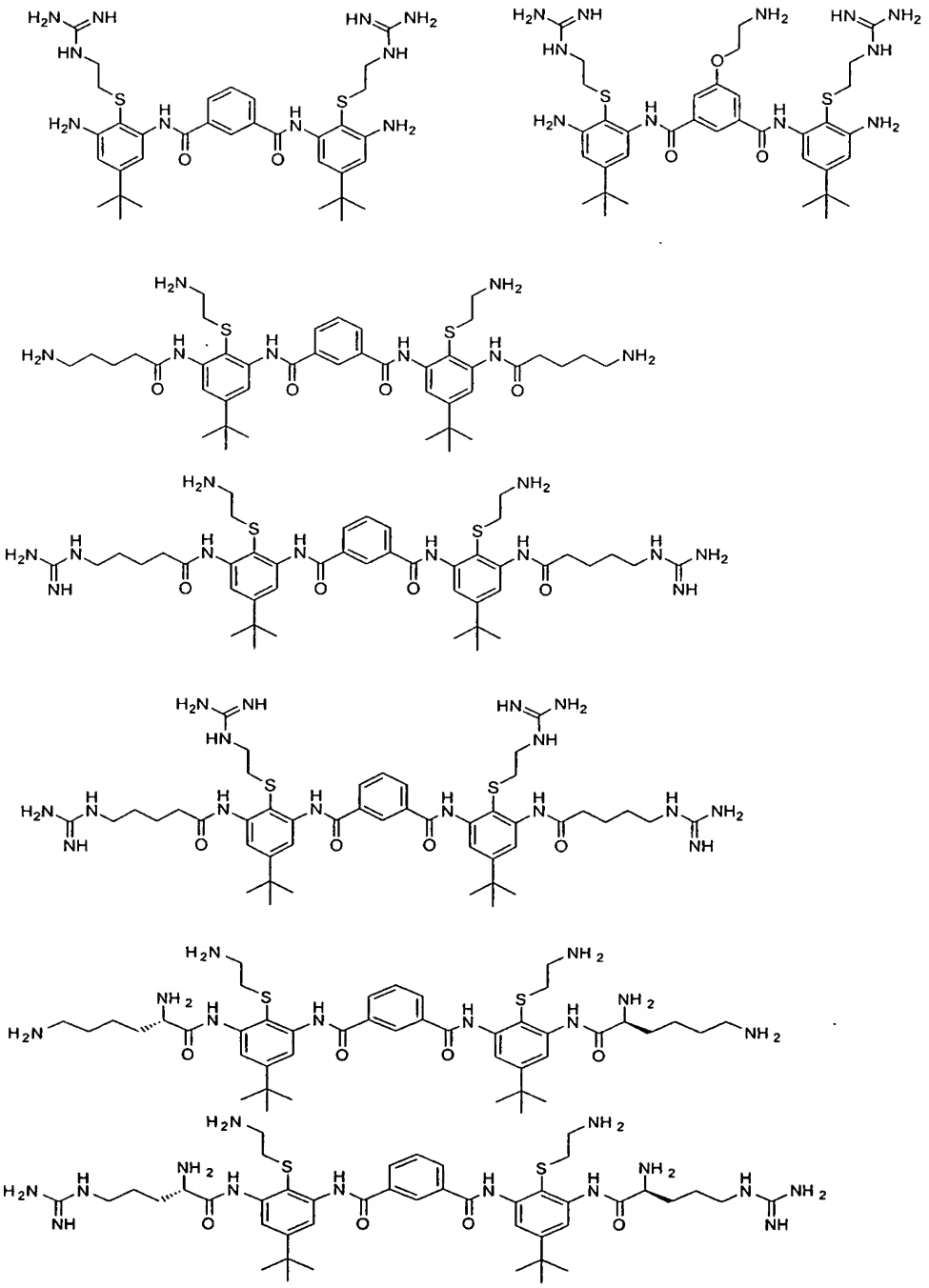
the -$(CH_2)_{pPL}$- alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

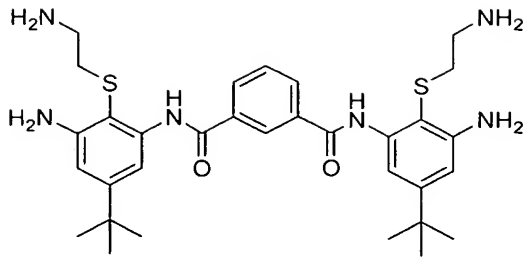
pPL is 0 to 8; and

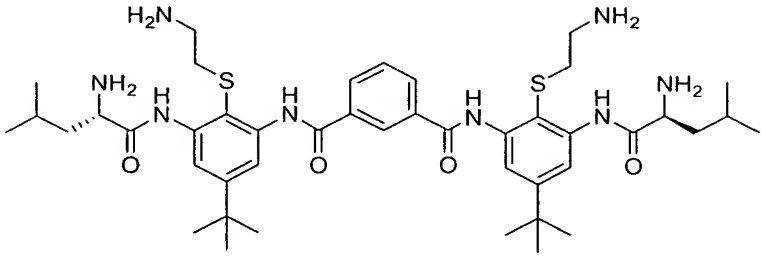
q1PL and q2PL are independently 0, 1 or 2;

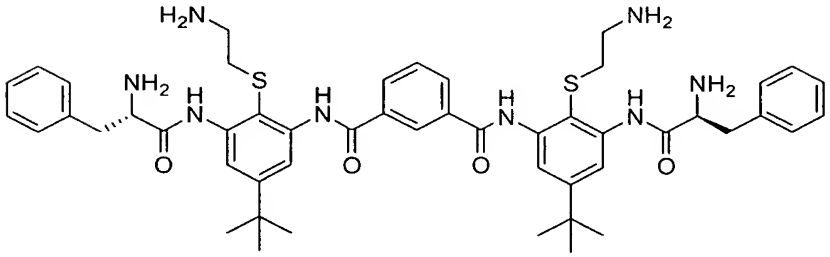
and a pharmaceutically acceptable carrier or diluent.

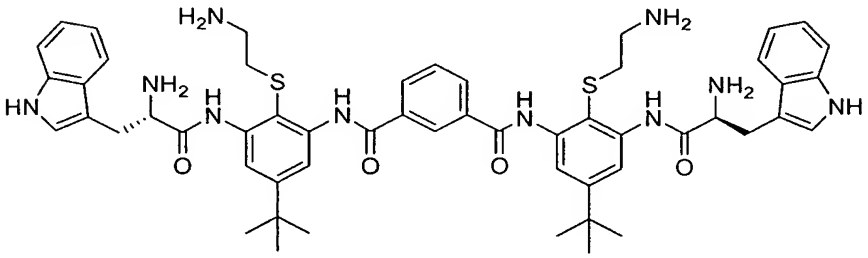
50. (original) The method of claim 49, wherein the oligomer is selected from the group consisting of:

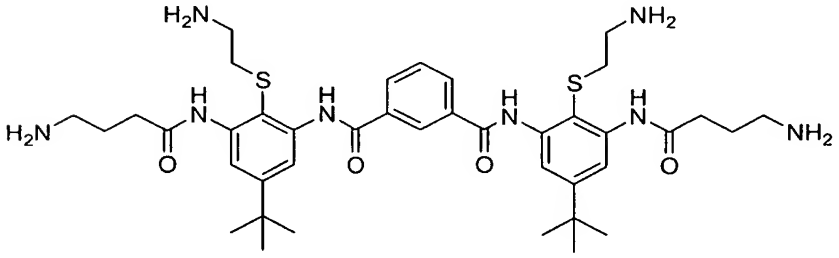


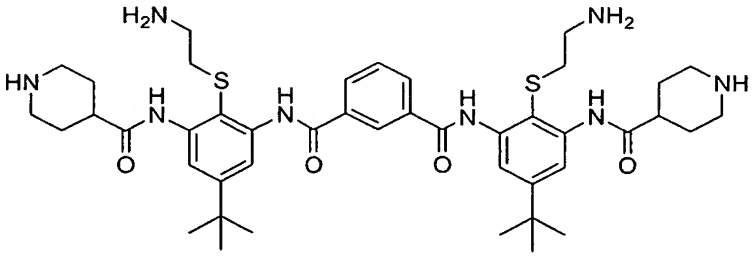


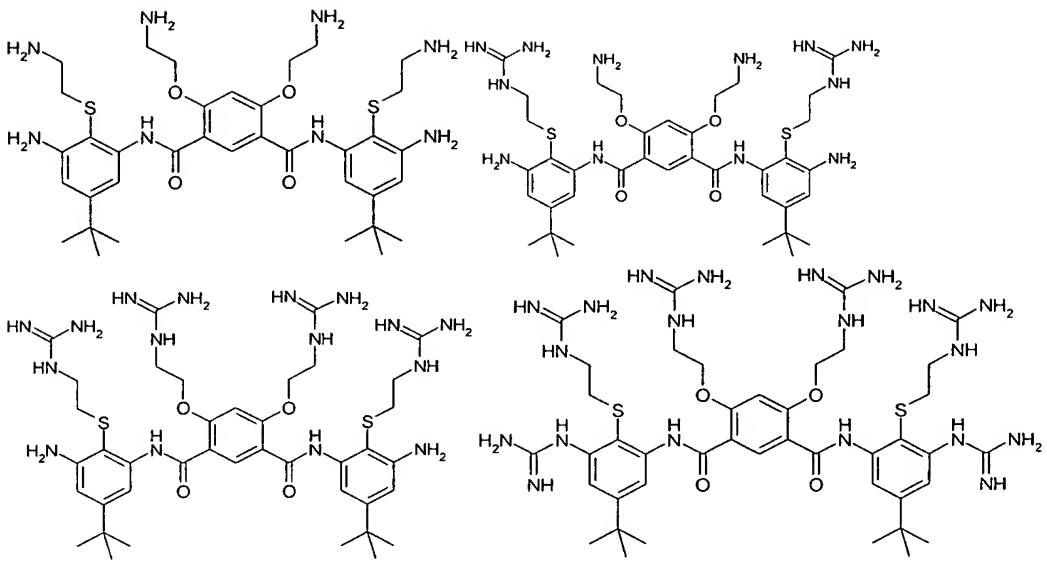


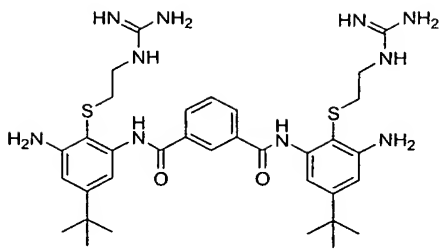


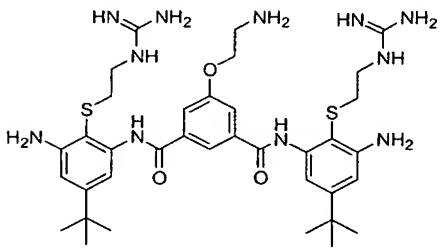


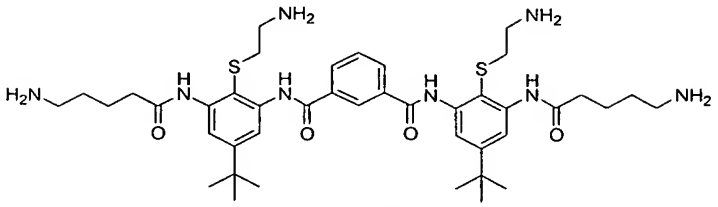


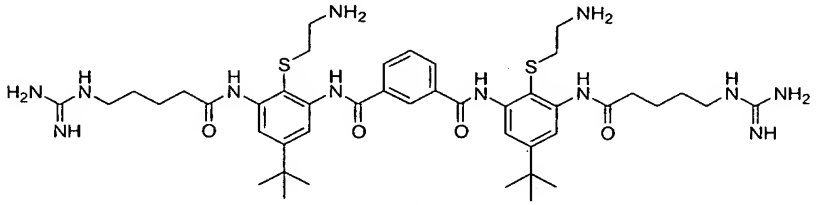


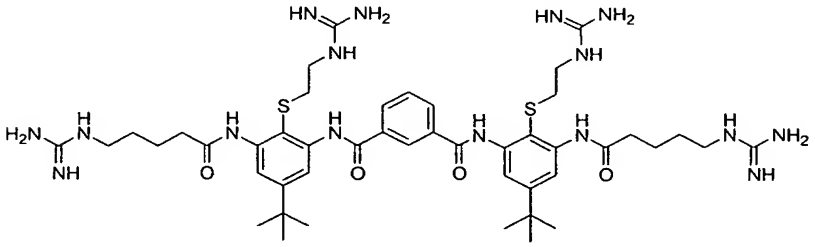


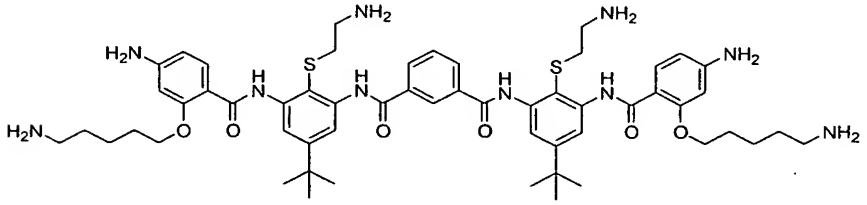


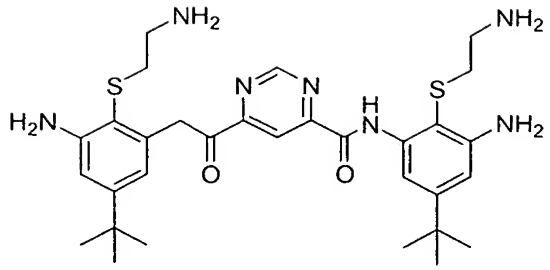


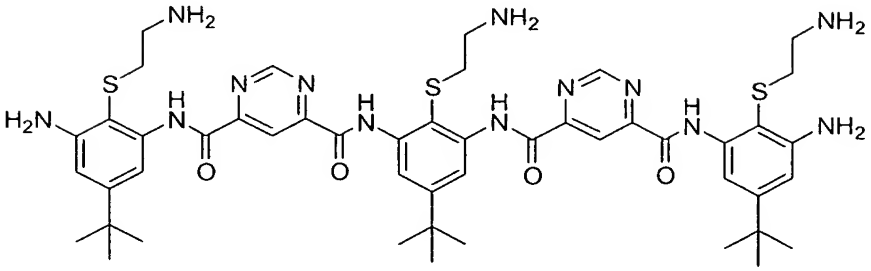


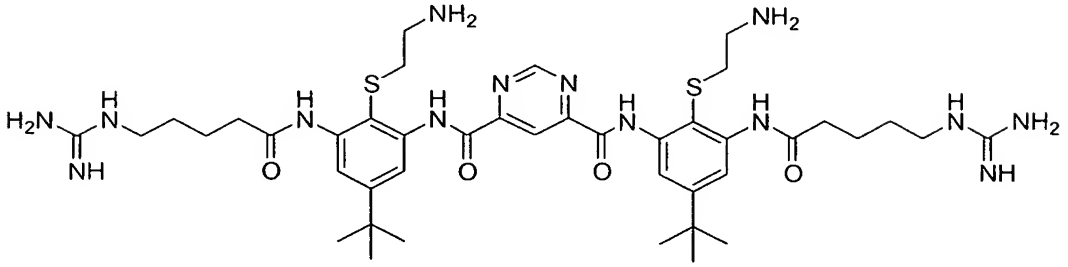












51. (original) The method of claim 16 or claim 49, wherein the microbial infection is a bacterial infection, a fungal infection, or a viral infection.

52. (cancelled)

53. (cancelled)

54. (original) A method of providing an antidote to low molecular weight heparin overdose in an animal, said method comprising administering to the animal an effective

amount of a pharmaceutical composition comprising an oligomer of claim 16 or claim 49.

55. (original) A method of treating a microbial infection in an animal in need thereof, said method comprising administering to the animal an effective amount of a pharmaceutical composition comprising an oligomer of Formula IV:

$$\mathbf{R^1\text{-}[\text{-}x\text{-}A_1\text{-}x\text{-}z\text{-}y\text{-}A_2\text{-}y\text{-}z]_m\text{-}R^2} \qquad \text{(IV)}$$

or an acceptable salt or solvate thereof,

wherein:

x is NR^8, $-NR^8NR^8-$, C=O, or O; y is NR^8, $-NR^8NR^8-$, C=O, S, or O; and R^8 is hydrogen or alkyl;

z is C=O, C=S, O=S=O, $-NR^8NR^8-$, or $-C(=O)C(=O)-$;

A_1 and A_2 are independently optionally substituted arylene or optionally substituted heteroarylene, wherein A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

R^1 is

(i) hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is

$-x-A_1-x-R^1$, wherein A_1 is as defined above and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(ii) hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is -x-A_1-x-z-y-A_2-y-R^1, wherein A_1 and A_2 are as defined above, and each of which is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(iii) hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is -x-A'-x-R^1, wherein A' is aryl or heteroaryl and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(iv) hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is -x-A_1-x-z-y-A'-y-R^1, wherein A_1 is as defined above, A' is aryl or heteroaryl, and each of A_1 and A' is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(v) –z-y-A' and R^2 is hydrogen, a polar group (PL), or a non-polar group (NPL), wherein A' is aryl or heteroaryl and is optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(vi) –z-y-A', and R^2 is -x- A", wherein A' and A" are independently aryl or heteroaryl, and each of A' and A" is optionally substituted with one or

more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s); or

(vii) R^1 and R^2 are independently a polar group (PL) or a non-polar group (NPL); or

(viii) R^1 and R^2 together form a single bond;

NPL is a nonpolar group independently selected from the group consisting of $-B(OR^4)_2$ and $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

R^4 and $R^{4'}$ are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heteroaryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^3, -C(=O)-, -C(=O)-N=N-NR^3-, -C(=O)-NR^3-N=N-, -N=N-NR^3-, -C(=N-$N(R^3)_2$)-, -C(=NR^3)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-, -R^3O-, -R^3S-, -S-C=N- and –C(=O)-NR^3-O- , wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the $-(CH_2)_{pNPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pNPL is 0 to 8;

q1NPL and q2NPL are independently 0, 1 or 2;

PL is a polar group selected from the group consisting of halo, hydroxyethoxymethyl, methoxyethoxymethyl, polyoxyethylene, and

$-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^5, -C(=O)-, -C(=O)-N=N-NR^5-, -C(=O)-NR^5-N=N-, -N=N-NR^5-, -C(=N-$N(R^5)_2$)-, -C(=NR^5)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-, -R^5O-, -R^5S-, -S-C=N- and –C(=O)-NR^5-O-, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of nitro, cyano, amino, hydroxy, alkoxy, alkylthio, alkylamino, dialkylamino, -$NH(CH_2)_pNH_2$ wherein p is 1 to 4, -$N(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, semicarbazone, aryl, heterocycle and heteroaryl, any of which is optionally substituted with one or more of amino, halo, cyano, nitro, hydroxy, -$NH(CH_2)_pNH_2$ wherein p is 1 to 4, -$N(CH_2CH_2NH_2)_2$, amidino, guanidino, guanyl, aminosulfonyl, aminoalkoxy, aminoalkythio, lower acylamino, or benzyloxycarbonyl;

the -$(CH_2)_{pPL}$- alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pPL is 0 to 8;

q1PL and q2PL are independently 0, 1 or 2; and

m is 1 to about 20;

and a pharmaceutically acceptable carrier or diluent.

56. (original) A method of treating a microbial infection in an animal in need thereof, said method comprising administering to the animal an effective amount of a pharmaceutical composition comprising an oligomer of Formula IVa, Formula IVb, or Formula IVc:

$$\mathbf{R^1\text{-}x\text{-}A_1\text{-}x\text{-}z\text{-}y\text{-}A_2\text{-}y\text{-}R^2} \quad \text{(IVa)}$$

$$\mathbf{R^1\text{-}x\text{-}A_1\text{-}x\text{-}z\text{-}y\text{-}A_2\text{-}y\text{-}z\text{-}x\text{-}A_1\text{-}x\text{-}R^2} \quad \text{(IVb)}$$

$$\mathbf{R^1\text{-}x\text{-}A_1\text{-}x\text{-}z\text{-}y\text{-}A_2\text{-}y\text{-}z\text{-}x\text{-}A_1\text{-}x\text{-}z\text{-}y\text{-}A_2\text{-}y\text{-}R^2} \quad \text{(IVc)}$$

or an acceptable salt or solvate thereof,

wherein:

x is NR^8, $-NR^8NR^8-$, C=O, or O; y is NR^8, $-NR^8NR^8-$, C=O, S, or O; and R^8 is hydrogen or alkyl;

z is C=O, C=S, O=S=O, $-NR^8NR^8-$, or $-C(=O)C(=O)-$;

A_1 and A_2 are independently optionally substituted arylene or optionally substituted heteroarylene, wherein A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

R^1 is hydrogen, a polar group (PL), or a non-polar group (NPL), and R^2 is R^1 ;

NPL is a nonpolar group independently selected from the group consisting of

$-B(OR^4)_2$ and $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

R^4 and $R^{4'}$ are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heteroaryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^3, -C(=O)-, -C(=O)-N=N-NR^3-, -C(=O)-NR^3-N=N-, -N=N-NR^3-, -C(=N-$N(R^3)_2$)-, -C(=NR^3)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-, -R^3O-, -R^3S-, -S-C=N- and -C(=O)-NR^3-O- , wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the $-(CH_2)_{pNPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pNPL is 0 to 8;

q1NPL and q2NPL are independently 0, 1 or 2;

PL is a polar group selected from the group consisting of halo, hydroxyethoxymethyl, methoxyethoxymethyl, polyoxyethylene, and $-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^5, -C(=O)-, -C(=O)-N=N-NR^5-, -C(=O)-NR^5-N=N-, -N=N-NR^5-, -C(=N-$N(R^5)_2$)-, -C(=NR^5)-, -C(=O)O-, -C(=O)S-, -C(=S)-, -O-$P(=O)_2$O-,

$-R^5O-$, $-R^5S-$, -S-C=N- and $-C(=O)-NR^5-O-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of nitro, cyano, amino, hydroxy, alkoxy, alkylthio, alkylamino, dialkylamino, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, semicarbazone, aryl, heterocycle and heteroaryl, any of which is optionally substituted with one or more of amino, halo, cyano, nitro, hydroxy, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, amidino, guanidino, guanyl, aminosulfonyl, aminoalkoxy, aminoalkythio, lower acylamino, or benzyloxycarbonyl;

the $-(CH_2)_{pPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pPL is 0 to 8;

q1PL and q2PL are independently 0, 1 or 2; and

a pharmaceutically acceptable carrier or diluent.

57. (original) The method of claim 56, wherein the pharmaceutical composition comprises an oligomer of Formula IV'b, wherein:

x is NR^8, y is NR^8, z is C=O, and R^8 is hydrogen;

A_1 and A_2 are independently optionally substituted *o*-, *m*-, or *p*-phenylene;

NPL is $-(NR^{3'})_{q1NPL}-U^{NPL}-(CH_2)_{pNPL}-(NR^{3''})_{q2NPL}-R^{4'}$, wherein:

$R^{4'}$ is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heteroaryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is selected from the group consisting of O, S, NR^3, -C(=O)-, $-R^3O-$, and $-R^3S-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the $-(CH_2)_{pNPL}-$ alkylene chain is optionally substituted with one or more amino groups;

pNPL is 0 to 8;

q1NPL and q2NPL are 0;

PL is $-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

U^{PL} is selected from the group consisting of O, S, NR^5, -C(=O), $-R^5O-$ and $-R^5S-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

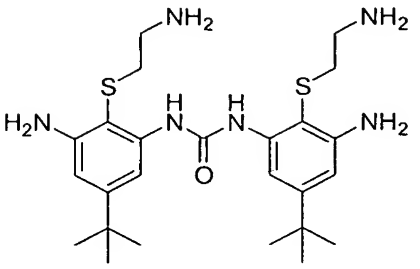
V is selected from the group consisting of amino, alkylamino, dialkylamino, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, aryl, heterocycle and heteroaryl;

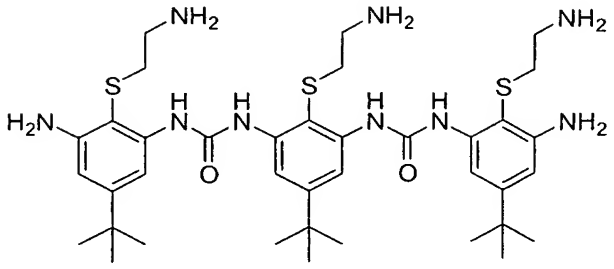
the $-(CH_2)_{pPL}-$ alkylene chain is optionally substituted with one or more amino groups;

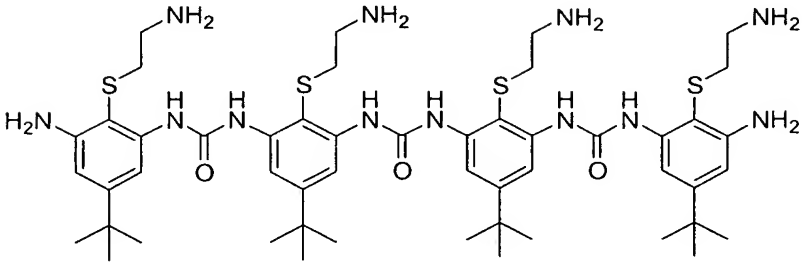
pPL is 0 to 8; and

q1PL and q2PL are 0.

58. (original) The method of claim 56, wherein the oligomer is one of







59. (original) The method of claim 55 or 56, wherein the microbial infection is a bacterial infection, a fungal infection, or a viral infection.

60. (cancelled)

61. (cancelled)

62. (original) A method of providing an antidote to low molecular weight heparin overdose in an animal, said method comprising administering to the animal an effective amount of a pharmaceutical composition comprising an oligomer of claim 55 or claim 56.

63. (original) An oligomer of of Formula IIa:

$$\mathbf{R^1\text{-}x\text{-}A_1\text{-}x\text{-}y\text{-}A_2\text{-}y\text{-}x\text{-}A_1\text{-}x\text{-}R^2} \qquad \text{(IIa)}$$

or an acceptable salt or solvate thereof,

wherein:

x is NR^8, O, S, or $-N(R^8)N(R^8)-$; and y is C=O, C=S, or O=S=O; wherein R^8 is hydrogen or alkyl;

A_1 and A_2 are independently optionally substituted arylene or optionally substituted heteroarylene, wherein A_1 and A_2 are independently optionally substituted with one or more polar (PL) group(s), one or more non-polar (NPL) group(s), or a combination of one or more polar (PL) group(s) and one or more non-polar (NPL) group(s);

R^1 is a polar group (PL) or a non-polar group (NPL); and R^2 is R^1;

NPL is a nonpolar group independently selected from the group consisting of $-B(OR^4)_2$ and $-(NR^{3'})_{q1NPL}\text{-}U^{NPL}\text{-}(CH_2)_{pNPL}\text{-}(NR^{3''})_{q2NPL}\text{-}R^{4'}$, wherein:

R^3, $R^{3'}$, and $R^{3''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

R^4 and $R^{4'}$ are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, cycloalkyl, aryl, and heteroaryl, any of which is optionally substituted with one or more alkyl or halo groups;

U^{NPL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^3, -C(=O)-, $-C(=O)\text{-}N=N\text{-}NR^3-$, $-C(=O)\text{-}NR^3\text{-}N=N-$, $-N=N\text{-}NR^3-$, $-C(=N\text{-}N(R^3)_2)-$, $-C(=NR^3)-$, -C(=O)O-, -C(=O)S-, -C(=S)-, $-O\text{-}P(=O)_2O-$,

$-R^3O-$, $-R^3S-$, -S-C=N- and $-C(=O)-NR^3-O-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

the $-(CH_2)_{pNPL}-$ alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pNPL is 0 to 8;

q1NPL and q2NPL are independently 0, 1 or 2;

PL is a polar group selected from the group consisting of halo, hydroxyethoxymethyl, methoxyethoxymethyl, polyoxyethylene, and $-(NR^{5'})_{q1PL}-U^{PL}-(CH_2)_{pPL}-(NR^{5'})_{q2PL}-V$, wherein:

R^5, $R^{5'}$, and $R^{5''}$ are independently selected from the group consisting of hydrogen, alkyl, and alkoxy;

U^{PL} is absent or selected from the group consisting of O, S, S(=O), $S(=O)_2$, NR^5, -C(=O)-, $-C(=O)-N=N-NR^5-$, $-C(=O)-NR^5-N=N-$, $-N=N-NR^5-$, $-C(=N-N(R^5)_2)-$, $-C(=NR^5)-$, -C(=O)O-, -C(=O)S-, -C(=S)-, $-O-P(=O)_2O-$, $-R^5O-$, $-R^5S-$, -S-C=N- and $-C(=O)-NR^5-O-$, wherein groups with two chemically nonequivalent termini can adopt both possible orientations;

V is selected from the group consisting of nitro, cyano, amino, hydroxy, alkoxy, alkylthio, alkylamino, dialkylamino, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, diazamino, amidino, guanidino, guanyl, semicarbazone, aryl, heterocycle and heteroaryl, any of which is optionally substituted with one or more of amino, halo, cyano, nitro, hydroxy, $-NH(CH_2)_pNH_2$ wherein p is 1 to 4, $-N(CH_2CH_2NH_2)_2$, amidino,

guanidino, guanyl, aminosulfonyl, aminoalkoxy, aminoalkythio, lower acylamino, or benzyloxycarbonyl;

the -$(CH_2)_{pPL}$- alkylene chain is optionally substituted with one or more amino or hydroxy groups, or is unsaturated;

pPL is 0 to 8; and

q1PL and q2PL are independently 0, 1 or 2.

64. (cancelled)

65. (currently amended) A ~~pharmceutical~~ pharmaceutical composition comprising an oligomer of claim 63 ~~or claim 64~~ and a pharmaceutically acceptable carrier or diluent.